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SECRETARY OF THE AIR FORCE**



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**Maintenance**

**AIRCRAFT SUN SHADE MANAGEMENT**

**COMPLIANCE WITH THIS PUBLICATION IS MANDATORY**

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This publication implements Air Force Policy Directive (AFPD) 21-1, *Air and Space Maintenance*. This instruction is the basic publication for implementing Aircraft Sun Shade Management across the Air Force enterprise. It provides senior leadership and management direction for standardizing procurement and sustainment of aircraft sun shades for protection and enhanced productivity of personnel. It applies to all Major Commands (MAJCOMs), Field Operating Agencies (FOA), Direct Report Units (DRU) including the Air Force Reserve Command (AFRC) and the Air National Guard (ANG), along with their subordinates and applicable Air Force units at joint bases. The Air National Guard is a MAJCOM for the purpose of this instruction. For assistance with interpreting this instruction, contact your MAJCOM functional policy activity. Deviation and waiver authority for this instruction is AF/A4L. Deviation and waiver authority for technical standards and codes is Air Force Civil Engineer Center, Director (AFCEC/CL). Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using an Air Force (AF) Form 847, *Recommendation for Change of Publication*; route AF Form 847s from the field through the appropriate functional's chain of command. MAJCOMs will supplement this instruction to document deviations. Identify each deviation on the supplement with (DEV) directly preceding the paragraph number. These supplements must be submitted to AF/A4L for approval; however supplements not including deviations do not require AF/A4L approval. Supplements will follow guidance in Air Force Instruction (AFI) 33-360, *Publications and Forms Management*. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with Air Force Manual (AFMAN) 33-363, *Management of Records*, and disposed of in accordance with the Air Force Records Disposition Schedule (RDS) located at <https://www.my.af.mil/afrims/afrims/afrims/rims.cfm>.

## ***SUMMARY OF CHANGES***

This integrating change reflects administrative changes and adds waiver authority tiers IAW AFI 33-360. Throughout this document, when a requirement is mandated for compliance at the Installation level, the appropriate waiver authority to the requirement is indicated in parentheses (T-0, T-1, T-2, or T-3) following the sentence/paragraph that drives the requirement. Additionally, references to AF Civil Engineer Field Operating Agency (FOA) have changed to the Air Force Civil Engineering Center. Finally, all references to AFMAN 23-110, *USAF Supply Manual* have been changed to AFI 23-101, *Materiel Management*. A margin bar (|) indicates newly revised material.

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## Chapter 1

### GENERAL PURPOSE AND SCOPE

**1.1. Purpose:** Provide guidance and a standardized approach to procure and sustain these equipment items. Additionally, it outlines overall management responsibilities for aircraft sun shades, crew shelters and portable/inflatable shelters.

**1.2. Scope:** Applies to all AF units possessing or procuring these equipment items to support logistics operations. It applies to any aircraft sun shade installed in the flight line or maintenance areas. This includes conventional force logistics units; nuclear and nuclear support units; cyber and space; special operations; wholesale-level procurement, sustainment, and maintenance; aerial port squadrons; logistics readiness squadrons; research, test, and development units. It does not include medical logistics, civil engineering logistics, security forces units and communications units.

1.2.1. Aircraft sun shades and other shelter types as defined below and addressed in this instruction are considered equipment items for accountability purposes and will be tracked/accounted for on appropriate documents (i.e. R-14/R-15 or locally built accountability lists) and managed IAW AFMAN 23-122, *Material Management Procedures*, AFH 23-123V2PT2, *Material Management Systems* and AFI 23-111, *Management of Government Property in Possession of the Air Force*. **(T-1)**. Items will also be assigned locally generated identification numbers and tracked in the Maintenance Information System (MIS). **(T-1)**. These assets are not listed on unit authorized equipment tables of allowance because they are not required support equipment for weapons systems. These assets are the responsibility of the owning organization. Commanders will ensure all other applicable organizations with appropriate subject matter expertise are involved in the procurement, installation, repair, sustainment, and replacement of these assets.

### 1.3. Definitions.

1.3.1. Aircraft Sun Shades: Structure with the sole purpose of providing minimal protection for personnel from the elements (sun, wind, rain, snow, etc., excluding lighting) with a roof and a maximum of two sides. Aircraft sun shades are not considered as temporary or relocatable facilities associated with MILCON projects. Procedures for temporary or relocatable facilities associated with MILCON projects are contained in AFI 32-1021, *Planning and Programming Military Construction (MILCON) Projects*. Aircraft sun shades are not intended to replace aircraft maintenance hangars and as such there is no requirement associated with aircraft specifications or real property procedures contained in AFI 32-1024, *Standard Facilities Requirements*, or AFMAN 32-1084, *Facility Requirements*. This term is now the standard term to identify these structures.

1.3.1.1. Aircraft sun shades are not considered temporary facilities nor real property. In addition, though it is possible to relocate aircraft sun shades, they are not considered relocatable facilities per the definition in AFI 32-1021. Relocatable buildings are designed to be readily erected, disassembled, stored, moved, and reused to meet a short-term requirement for facilities due to either transitory peak requirements or urgent requirements pending approval, such as construction of facilities via normal military construction programs. According to AFI 32-1021, Chapter 6, *Relocatable and*

*Temporary Facilities*, the terms temporary and relocatable are interchangeable. Furthermore, AFI 32-1021 provides guidance on satisfying interim facility requirements using relocatable or temporary facilities. Aircraft sun shades are not incident or interim to a MILCON project, nor are they in place to meet a temporary requirement; therefore the terms temporary or relocatable as used in AFI 32-1021 does not apply to aircraft sun shades.

1.3.2. Crew Shelters: Any portable or prefabricated structure placed inside/under or erected to support activities within an aircraft sun shade, hangar, hardened aircraft shelter or protective aircraft shelter. These should not be confused with other shelters that are designed for personnel protection only (e.g. End-of-Runway shacks).

1.3.3. Portable/Inflatable shelters: A structure constructed using layers of membrane connected together using pressurized air to produce a structure which covers limited areas (e.g. cargo aircraft engine, open fuel tanks) of an aircraft or equipment.

1.3.4. Allied support: Utilities (e.g. electrical, water, air, communications, etc.) provided up to a stub at each aircraft sun shade. Utilities are real property assets. Installation of new utility services carries a work classification of Construction. See paragraph 2.9.

## Chapter 2

### RESPONSIBILITIES

#### 2.1. Headquarters Air Force.

##### 2.1.1. AF/A4L will:

2.1.1.1. Develop, articulate, and clarify all Air Force aircraft sun shade policies.

##### 2.1.2. AF/A7C will:

2.1.2.1. Provide input for development and clarification of aircraft sun shade policies.

2.1.2.2. Determine appropriate A7C agencies responsible for procurement consultation to the field.

2.1.2.3. Develop allied support guidance in relation to aircraft sun shades.

#### 2.2. Lead MAJCOM A4s will:

2.2.1. Provide input to AF/A4L on Air Force aircraft sun shade policies.

#### 2.3. MAJCOM A4s will:

2.3.1. Provide input to AF/A4L on Air Force aircraft sun shade policies.

2.3.2. Review all plans for procurement, installation and sustainment of aircraft sun shades for initial procurement or modifications (e.g. lighting, power, compressed air, communications, etc.) to existing aircraft sun shades with assistance from MAJCOM A3/A6/A7/Safety as outlined in paragraphs 2.5.1.11 and 2.6.

2.3.3. Develop weather event baseline criteria if not previously developed so an organization can procure an acceptable aircraft sun shade suitable to their specific location. Consider annual days of sun, average wet bulb globe temperature, annual rainfall, and annual snowfall, UV index, snow load, snow removal capability, wind sustainment requirements and temperatures that may affect work-rest cycles and overall productivity, etc.

2.3.4. Coordinate with MAJCOM A3/A7/ Safety, and proper civilian airport authorities when applicable prior to approving the procurement or installation of aircraft sun shades.

2.3.5. Approve/disapprove submitted request(s) based on information contained under the owning organization responsibilities section of this chapter.

2.3.6. Provide field operating and sustaining organizations direction on the specific types and sizes of aircraft sun shades to use for each application.

#### 2.4. Owning Organization.

2.4.1. The owning organization is the group level or equivalent organization responsible for the planning, funding, procurement, installation, maintenance, and lifetime sustainment of the aircraft sun shade including any installed utilities (e.g. lighting, obstructions in front lighting, electrical, communications, etc.) included in the project scope as defined in paragraphs 1.3.4 and 2.9. Owning organizations may install aircraft sun shades, upon MAJCOM A4 approval, to provide protection from the sun or other weather events such as: rain, sleet, snow, etc.

2.4.2. Grounding systems shall be the responsibility of the owning organization from the single point service ground and testing requirements of grounding systems shall be the responsibility of the owning organization. **(T-1)**. These responsibilities can be contracted as outlined in paragraph 2.8.

2.4.3. The owning organization is responsible for maintaining and storing manufacturer design drawings and specifications, and providing ready access to installation agencies as necessary. **(T-1)**.

2.4.4. For each procurement, and each aircraft sun shade related contracting effort (e.g. inspection and sustainment contracts) referenced in paragraph 2.8.3 of this publication, the owning organization will provide and appoint a contracting officer representative (COR) that reports to the contracting officer on all aspects of implementation of the contract **(T-0)**. For these same procurements and contracting actions, the owning organization will, in agreement with the local Civil Engineering organization, appoint a Civil Engineering representative as the contracting officer technical representative (COTR) **(T-1)**. The COTR will assist the COR in enforcing established engineering standards or inspection criteria as defined and incorporated in the procurement/sustainment contract in order to address safety and integrity of the structure. **(T-1)**. The COTR will also assist the COR in providing quality oversight authority for any technical/serviceability inspections performed on the structure by the contractor. **(T-1)**.

## 2.5. New Procurements.

2.5.1. The owning organization will:

2.5.1.1. Develop plans for purchase, installation, acceptance and sustainment then submit information to the MAJCOM A4 for plan approval **(T-2)**. If the owning organization intends to request allied support, the owning organization should include these costs in the forecast. If allied support is required submit an AF Form 332, *Base Civil Engineer Work Order*, to Civil Engineering Customer Service **(T-2)**.

2.5.1.2. Use AFI 65-601, Vol I, Chapter 9, *Budget Guidance and Procedures*, to determine correct appropriation for procurement and installation of aircraft sun shades and other shelter types described in this publication. Plan and fund equipment sustainment IAW paragraph 2.7.2.

2.5.1.3. Use strategic sourcing, if available, for standardization and to leverage buying power from an enterprise perspective.

2.5.1.4. Ensure procurement and all facets of aircraft sun shade sustainment are considered; all applicable installation functional areas (CE, Airfield Management, Comm, Safety, Medical, etc.) are involved in the siting and selection process, and is approved by the installation's facility board. **(T-1)**. If expertise is not available in the owning organization, contact the appropriate MAJCOM representative or AFCEC for further guidance. All new sun shades will be compliant with current applicable structural, environmental and safety standards. **(T-1)**. Ensure compliance with criteria and design as outlined in paragraph 2.6.

2.5.1.5. Submit planning materials to include drawings, dimensions, cost estimates and statements of work, as well as ramp work striping and support equipment requirements to

their applicable MAJCOM A4. **(T-2)**. This must be completed as early as possible in the planning phase to facilitate a smooth execution phase.

2.5.1.6. Ensure use of reflective markings on corner structural supports regardless of lighting used. **(T-2)**.

2.5.1.7. Ensure use of retro reflective beads for all apron, taxiway and taxi lane markings near aircraft sun shades IAW AFI 32-1042, *Standards for Marking Airfields*. **(T-1)**.

2.5.1.8. Perform an evaluation of all proposed sun shade installation plans to ensure requirements in UFC 3-260-01, *Airfield and Heliport Planning and Design* and AFI 32-1042 are met. Any waivers will be approved prior to contract award or construction of the sun shade. **(T-1)**. Ensure waiver authorities do not undermine contract requirements or federal regulations (e.g. FARS, DFARS, etc.). **(T-0)**.

2.5.1.9. Ensure aircraft sun shades that penetrate an airfield imaginary surface defined in UFC 3-260-01 have obstruction lights installed IAW UFC 3-535-01, *Visual Air Navigation Facilities*, and conform to requirements contained in Engineering Technical Letter 11-29, *Use of Light-Emitting Diode (LED) Fixtures in Airfield Lighting Systems on Air Force Installations and Enduring/Contingency Locations*. **(T-1)**.

2.5.1.10. Ensure compliance with fuel servicing safety requirements in accordance with TO 00-25-172, *Ground Servicing of Aircraft and Static Grounding/Bonding*. **(T-1)**.

2.5.1.11. Address the following items and those in paragraph 2.6 below as a minimum in installation plans submitted to applicable MAJCOM A4 for approval. **(T-2)**:

2.5.1.11.1. Aircraft sun shade protection characteristics such as hail size, snow, ice and water accumulation (weight and/or inches, consider water runoff, ice mitigation), maximum winds (sustained and gusts), aircraft tie down and lightning/grounding protection determined in conjunction with proper local authorities or AFCEC.

2.5.1.11.2. Structure and anchor points that meet minimum local wind ratings and updraft requirements in accordance with UFC 3-301-01(Change 2), *Structural Engineering*. Consider jet blast potential in aircraft sun shade design and siting.

2.5.1.11.3. Number of spots to be covered. Consider ramp space capacity for both peacetime and contingency requirements (reception and bed down).

2.5.1.11.4. Number of parking spaces lost due to aircraft sun shade placement. Consider ramp requirements, future mission changes, and impact on overall aircraft parking plan.

2.5.1.11.5. Design life expectancy and warranty information.

2.5.1.11.6. Expected costs including procurement, installation, and projected annual sustainment costs, to include inspection services. Ensure adequate resources are established to maintain aircraft sun shade serviceability and mission accomplishment.

2.5.1.11.7. Sustainment methodology (maintenance supported, manufacturer supported, supplemental contractor, etc.). Ensure minimum requirements outlined in paragraph 2.8.3 are addressed.

2.5.1.11.8. Foreign Object Damage (FOD) mitigation and prevention.

2.5.1.11.9. Planned storage of Aerospace Ground Equipment (AGE) and other related support equipment in aircraft sun shades within the maintenance area.

2.5.1.11.10. Provisions for electrical power units or powered AGE placement and protection from equipment exhaust and aircraft jet blast while operating in/near aircraft sun shades.

2.5.1.11.11. Environmental impacts and mitigation plans. Ensure the host Environmental Planning Function (EPF) reviews proposals for installation of aircraft sun shades and associated utilities as early in the planning process as possible. The EPF is responsible for determining the level of environmental impact analysis required. Environmental impact analysis must be completed prior to contract award or implementation.

2.5.1.11.12. Conduct and include a Risk Management (RM) assessment IAW AFPD 90-8, *Environment, Safety, and Occupational Health Management and Risk Management* (ESOH), and AFI 90-802, *Operational Risk Management*, to determine potential impact to personnel, environmental, safety, occupational health and airfield operations before procurement and installation activities begin.

2.5.1.11.13. Any issues affecting control tower visibility or security to include security lighting and illumination and any issues affecting NAVAIDS.

2.5.1.11.14. Obstructions to airspace and file FAA Form 7460-1, *Notice of Proposed Construction or Alteration*, with the FAA for new construction.

2.5.1.11.15. Communications requirements. If communication (LAN, wireless, etc.) is placed in aircraft sun shades, provide explanation of how communications will be procured, installed and sustained. Include in procurement, installation, and sustainment cost estimates.

2.5.1.11.16. Any limitations on emergency and maintenance vehicle access to aircraft.

## **2.6. Design Criteria/Standards of New or Replacement Aircraft Sun Shades.**

2.6.1. Type of material used. Select materials as appropriate for location, type of aircraft sun shade, and the mission being served. The aircraft sun shade and side material shall be fabric, reinforced aramid fiber, carbon fiber, galvanized steel or shop/factory painted steel. **(T-2)**. The frame material will be galvanized steel or other suitable newly designed building material with strength and durability characteristics that replicate or exceed that of galvanized steel. **(T-2)**. Current aircraft sun shades that don't meet these requirements of current design standardization are authorized for use until time of replacement. If repairs become significant or not cost effective, owning organizations should consider replacement to the new standard or removal of the aircraft sun shade. To minimize diversity of types of aircraft sun shades across the enterprise and to establish better efficiencies in procurement and long-term sustainment, use strategic sourcing, if available. If strategic sourcing is not available, seek additional guidance from MAJCOM A4 on aircraft sun shade standardization.

2.6.2. Aircraft sun shade height and width. Aircraft sun shades must meet minimum clearance requirements for interior aircraft movement, as well as, entrances and exit points



including taxi lanes or taxiways in close proximity to the exterior of the structure. **(T-1)**. Refer to UFC 3-260-01, *Airfield and Heliport Planning and Design*, Chapters 6 and 8 for these dimensions. Consider AGE transport and maintenance/emergency vehicle height requirements. Also, consider exhaust blast from jet engines and auxiliary power units, and future mission changes that may impact aircraft sun shade height and width requirements.

2.6.3. Wing tip and tail height clearances will meet the requirements outlined in AFI 91-203, *Air Force Consolidated Occupational Safety Instruction*, and UFC 03- 260-01, *Airfield and Heliport Planning and Design*. **(T-1)**.

2.6.4. Bird nesting/roosting mitigation. Ensure no bird roosting or nesting locations are present, all holes in support structure and beneath roof must be covered or screened. **(T-1)**. The metal structure should minimize potential nesting sites for birds. Anti-perching devices shall be installed to deter birds from perching on or under the structure. **(T-1)**.

2.6.5. Airfield waivers. The owning organization will make every effort to prevent submission of new airfield waivers.

2.6.6. Ensure Terminal Instrument Procedures (TERPS) personnel evaluate plans for potential impacts on aircraft approach/departure procedures. **(T-1)**.

2.6.7. Lighting requirements. If lighting is placed in or on the aircraft sun shades, provide explanation of how electricity will be provided to and within the aircraft sun shade. Ensure lighting provides sufficient illumination for security, but does not interfere with flightline visual references. Lighting procurement, installation, maintenance and sustainment shall be included in aircraft sun shade cost estimates. **(T-1)**. Lighting designs and fixture specifications shall be in accordance with UFC 3-530-01, *Design, Interior and Exterior Lighting and Control* and Engineering Technical Letter (ETL)12-15, *Light-Emitting Diode (LED) Fixture Design and Installation Criteria for Interior and Exterior Lighting Applications*. **(T-1)**. Light mounts shall be designed to handle wind loads on the light fixtures without damaging the lights and without compromising the structural integrity of the aircraft sun shade. **(T-1)**.

2.6.8. Electrical requirements. If electrical power is to be placed in aircraft sun shades, provide explanation of how electricity will be provided to and within the aircraft sun shade. Procurement, installation, maintenance and sustainment of electrical requirements on the load side of the power supply point/stub shall be included in aircraft sun shade cost estimates. **(T-1)**. Electrical power system design shall be in accordance with AFI 32-1063, *Electric Power Systems*, AFI 32-1065, *Grounding Systems*, UFC 3-501-01, *Electrical Engineering*, UFC 3-520-01, *Interior Electrical Systems*, UFC 3-530-01, *Design, Interior and Exterior Lighting and Controls*, and UFC 3-550-01, *Exterior Electrical Power Distribution*, UFC 3-600-01, *Fire Protection Engineering for Facilities*, and ETL 02-15, *Fire Protection Engineering Criteria - New Aircraft Facilities*. **(T-1)**.

2.6.9. In no case will the loss of parking spots resulting from the purchase or installation of aircraft sun shades be a primary factor used to propose or construct additional aircraft parking spots or upgrade existing pavements to support aircraft. Procedures on construction of additional parking spots or pavement upgrades will be IAW AFI 32-1021. Whenever possible, aircraft sun shades will be installed on existing pavement without driving a

requirement to expand or upgrade the underlying features. The cost of installation of additional pavement will be considered as part of the total sun shade project cost. **(T-1)**.

2.6.10. Aircraft sun shades are airfield fixed-structure obstructions and will meet MIL-STD-3007, *Department of Defense Standard Practice for Unified Facilities Criteria (UFC) and Unified Facilities Guide Specifications (UFGS)*, 13 Dec 2006 and Air Force criteria included in referenced UFCs and AFIs, as well as, local and national fire, safety, and electrical standards and codes as applicable. **(T-1)**.

2.6.11. Consider location specific design requirements (e.g. snow load, maximum wind ratings, etc.)

2.6.12. Aircraft sun shades must meet ventilation and exhaust air requirements in accordance with the International Mechanical Code. **(T-0)**. Achieve minimum exhaust and/or ventilation air requirements for either mechanical or natural systems.

2.6.13. Aircraft sun shades will only have a roof and maximum of two sides. **(T-1)**.

## **2.7. Current Aircraft Sun Shades.**

2.7.1. To replace currently installed aircraft sun shades, select materials as appropriate for location, type of aircraft sun shade, and the mission being served. The aircraft sun shade and side material shall be fabric, reinforced aramid fiber, carbon fiber, galvanized steel or shop/factory painted steel. **(T-2)**. The frame material will be galvanized steel or other suitable newly designed building material with strength and durability characteristics that replicate or exceed that of galvanized steel. **(T-2)**. Current aircraft sun shades that don't meet these requirements of current design standardization are authorized for use until time of replacement. If repairs become significant or not cost effective, owning organizations should consider replacement to the new standard or removal of the aircraft sun shade. To minimize diversity of types of aircraft sun shades across the enterprise and to establish better efficiencies in procurement and long-term sustainment, use strategic sourcing, if available. If strategic sourcing is not available, seek guidance from higher headquarters on aircraft sun shade standardization.

2.7.2. Owning organizations will sustain aircraft sun shades and other shelter types described in this publication IAW AFI 65-601, Vol I, Chapter 9 to ensure no degradation of safety to personnel or mission accomplishment occurs. **(T-1)**.

2.7.3. Owning organizations will conduct an RM assessment IAW AFI 90-802 in conjunction with proper local authorities on current aircraft sun shades for FOD mitigation, markings, bird roosting mitigation, sustainability, safety, structural integrity, wind-load capacity, snow-load capacity, and ability to withstand hail. **(T-1)**. The owning organization is responsible for repairing any deficient areas identified during the RM assessment.

2.7.4. There is no requirement to upgrade current aircraft sun shades to meet the full requirements outlined in paragraphs 2.5.1 through 2.5.1.11.16 and 2.6.1 through 2.6.13 except where codes apply and are mandatory. However, any replacement or significant repair of current aircraft sun shades will meet requirements as outlined in paragraphs 2.5.1 through 2.5.1.11.16 and 2.6.1 through 2.6.13.

2.7.5. Upgrading or altering an existing aircraft sun shade including adding a wall(s) or bay(s) must be approved by the MAJCOM A4 prior to installation in the same manner as

approval for a new aircraft sun shade, to include review by a licensed structural subject matter expert. **(T-2)**. Installation and acceptance must also include a licensed structural subject matter expert. Alterations can significantly impact loading on the structure.

**2.8. Sustainment and Accountability.** Owning organization Group Commander or equivalent will:

2.8.1. Appoint a local aircraft sun shade manager and establish an aircraft sun shade user and operations plan. Ensure assets are tracked as equipment items on the appropriate documents (i.e. R-14/R-15 or locally built accountability lists) IAW AFMAN 23-122 and AFI 23-111. **(T-1)**.

2.8.2. Ensure appropriate authorities (e.g. MXG, Contracting, Comm, CE, contracted services, Safety, etc.) at the installation level accept installation of aircraft sun shades and allied support IAW manufacturer specifications, contract specifications, and Air Force Instructions. **(T-1)**.

2.8.3. Develop an organically supported or contractor supported replacement/sustainment plan that will be included in the 10-year facility plan as outlined in AFI 21-101, *Aircraft and Equipment Maintenance Management*. **(T-1)**. **Note:** This statement does not limit the plan from exceeding the minimum 10-year requirement.

2.8.3.1. Sustainment plan at a minimum will address the following: **(T-1)**

2.8.3.1.1. Certification and acceptance of installation as needed and appropriate.

2.8.3.1.2. Routine maintenance/sustainment and inspection criteria/services which meets manufacturer or qualified engineering authority guidance as needed and appropriate.

2.8.3.1.3. Periodic and recurring in-depth inspections with prescribed interval/frequency and items to be inspected to determine structural integrity as appropriately defined for each type of structure by the manufacturer or qualified engineering authority as needed and appropriate.

2.8.3.1.4. Non-routine maintenance/sustainment and inspection services as needed and appropriate.

2.8.4. Ensure development of local policy that establishes periodic inspection criteria as recommended by original manufacturer (interval not to exceed 6 months) approved by a qualified engineering authority for aircraft sun shades and document on AFTO Form 244, *Industrial Support Equipment Record*. **(T-1)**. Inspection actions to include upcoming and completed inspections will be tracked in the MIS. **(T-1)**. As a minimum, the owning organization will ensure inspection of: **(T-1)**.

2.8.4.1. Structure supports for corrosion, loose hardware and damage.

2.8.4.2. Foreign Object (FO), cleanliness and serviceability of installed safety markings.

2.8.4.3. Lighting (if installed) for security and serviceability.

2.8.4.4. Electrical system equipment, including electrical panels, receptacles (if installed), lighting systems, and conduit for security and serviceability.

2.8.5. Any discrepancy identified during routine, non-routine maintenance or other visual inspection will be documented on the AFTO Form 244; appropriate condition symbol will be used IAW TO 00-20-1, *Aerospace Equipment Maintenance Inspection, Documentation, Policies, and Procedures*. (T-1). Additionally, all discrepancies will be annotated in the MIS. (T-1). If a discrepancy is discovered which could affect safety or structural integrity this information will immediately be directed to the owning organization group commander or equivalent. (T-1). The owning organization group commander or equivalent with advisement from the qualified engineering authority and safety personnel will make a determination/decision on whether the sun shade is in an acceptable condition to continue performing its intended purpose or whether the sun shade should be removed from service and all assets and personnel vacated from the sun shade until repair is completed. (T-1).

2.8.6. Establish an emergency evacuation plan to protect both personnel and equipment from inclement/severe weather that would compromise the integrity of the aircraft sun shade roof or support structure. (T-1). During inclement/severe weather situations including but not limited to high winds, thunderstorms, lightning, hail, tornadoes, hurricanes or other adverse weather warning situation personnel will be evacuated from the aircraft sun shade, not to the aircraft sun shade. The aircraft sun shade is not intended to be used as a protective shelter in these situations.

## **2.9. Allied Support (e. g. Electricity, Water, Communications, Lighting, etc.).**

2.9.1. If elected, electrical power shall be provided to a connection point at the aircraft sun shade in accordance with UFC 3-550-01, *Exterior Electrical Power Distribution*, and will be installed/maintained by CE as real property IAW AFI 32-9005, *Real Property Accountability and Reporting*. Allied support funding requirements will be prioritized along with other facility and infrastructure requirements through the Facilities Board process or applicable installation facility project prioritization process.

2.9.2. If elected, water lines can be installed to a stub at the aircraft sun shade site and will be installed/maintained by CE as real property IAW AFI 32-9005. Water stubs/connections must be appropriately protected from frost/freeze and other environmental conditions. (T-2). These stubs/connections must be prominently marked to prevent hazards and accidents. (T-2). Allied support funding requirements will be prioritized along with other facility and infrastructure requirements through the Facilities Board process or applicable installation facility project prioritization process. (T-2).

2.9.3. If elected, communications shall be provided to the aircraft sun shade in accordance with UFC 3-580-01, *Telecommunications Building Cabling Systems Planning and Design*, and will be installed/maintained by qualified communications personnel. Allied support funding requirements will be prioritized along with other facility and infrastructure requirements through the Facilities Board process or applicable installation facility project prioritization process. (T-2).

2.9.4. Lighting installation will be considered during procurement and/or sustainment phases and will be purchased and maintained by the owning organization from the light to the power stub. (T-1). If lighting is to be included in an aircraft sun shade, the owning organization shall include this in the procurement, installation, and sustainment plan. (T-2). Owning organizations shall use criteria and consultation as outlined in paragraphs 2.5 through 2.7. Energy efficient lighting will be considered where allowable.

2.9.5. Power receptacles will be considered during the procurement and/or sustainment phases and will be purchased and maintained by the owning organization from the power receptacles to the power stub. **(T-1)**. If power is to be included, the owning organization shall include this in the procurement, installation, and sustainment plan. Owning organizations shall use criteria and consultation as outlined in paragraphs 2.5 through 2.7.

## Chapter 3

### ADDITIONAL SHELTER TYPES

#### 3.1. Crew Shelters.

3.1.1. Owning organizations will address the following items as a minimum in installation plans submitted to applicable MAJCOM A4 for approval: **(T-2)**

3.1.1.1. Annual procurement and sustainment costs, including allied support infrastructure costs. See paragraph 2.9. for allied support procedures.

3.1.1.2. Ensure shelter meets all standards and codes as applicable. Crew shelters and inflatable or fabric structures must comply with the minimum Antiterrorism Standard requirements of UFC 4-010-01. **T-0.**

3.1.1.3. Ensure a FOD mitigation plan is implemented.

3.1.1.4. Warranty information.

3.1.1.5. Wing tip and tail height clearances will meet the requirements outlined in AFI 91-203 and UFC 03-260-01.

3.1.1.6. Appoint a shelter manager and establish a shelter user and operations plan. Ensure assets are tracked as equipment items on the appropriate documents (i.e. R-14/R-15) IAW AFMAN 23-122.

3.1.2. Crew shelters will meet minimum ventilation standards in accordance with the International Mechanical Code when occupied. **(T-0).**

#### 3.2. Portable/Inflatable Shelters.

3.2.1. Owning organizations will: **(T-2)**

3.2.1.1. Ensure a FOD mitigation plan is implemented.

3.2.1.2. See paragraph 2.9. for allied support procedures.

3.2.1.3. Appoint a shelter manager and establish a shelter user and operations plan. Ensure assets are tracked as equipment items on the appropriate documents (i.e. R-14/R-15) IAW AFMAN 23-122.

3.2.2. Ensure a FOD mitigation plan is implemented.

3.2.3. See paragraph 2.9 for allied support procedures.

3.2.4. Appoint a shelter manager and establish a shelter user and operations plan. Ensure assets are tracked as equipment items on the appropriate documents (i.e. R-14/R-15) IAW AFMAN 23-110.

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## Attachment 1

## GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

*References*

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### ***Adopted Forms***

AF Form 332, *Base Civil Engineer Work Order*

AF Form 847, *Recommendation for Change of Publication*

AFTO Form 244, *Industrial Support Equipment Record*

FAA Form 7460-1, *Notice of Proposed Construction or Alteration*

### ***Abbreviations and Acronyms***

**AF**—Air Force

**AFCEC**—Air Force Civil Engineer Center

**AFH**—Air Force Handbook

**AFI**—Air Force Instruction

**AFMAN**—Air Force Manual

**AFPD**—Air Force Policy Directive

**AFRC**—Air Force Reserve Command

**AFTO**—Air Force Technical Order

**AGE**—Aerospace Ground Equipment

**ANG**—Air National Guard

**CE**—Civil Engineer

**CA/CRL (R—14)**—Custodian Authorization/Custody Receipt Listing

**COMM**—Communication

**COTR**—Contracting Officer Technical Representative



**DEV**—Deviation

**DRU**—Direct Reporting Unit

**EPF**—Environmental Planning Function

**ESOH**—Environment, Safety, and Occupational Health Management and Risk Management

**ETL**—Engineering Technical Letter

**FAA**—Federal Aviation Administration

**FO**—Foreign Object

**FOA**—Field Operating Agencies

**FOD**—Foreign Object Damage

**IAW**—In Accordance With

**LAN**—Local Area Network

**MAJCOM**—Major Command

**MILCON**—Military Construction

**MIS**—Maintenance Information System

**MXG**—Maintenance Group

**NAVAIDS**—Navigational Aids

**O&M**—Operation and Maintenance

**OPR**—Office of Primary Responsibility

**OVL (R—15)**—Organizational Visibility Listing

**RDS**—Air Force Records Disposition Schedule

**RM**—Risk Management

**TERPS**—Terminal Instrument Procedures

**USAF**—United States Air Force

**UFC**—Unified Facilities Criteria

**UFGS**—Unified Facilities Guide Specifications